

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Previously presented) A diffusion layer for a fuel cell comprising a base layer impregnated with a binder for structural reinforcement, and a water-repellent layer with a multi-layer structure including an inner layer and an outer layer different in adhesiveness and strength to each other.

2. (Withdrawn) A method for manufacturing a diffusion layer including at least a base layer for a fuel cell comprising the steps of:  
providing said base layer,  
wherein said base layer only is increased in strength during providing the base layer.

3. (Withdrawn) An apparatus for manufacturing a diffusion layer including at least a base layer for a fuel cell comprising:  
a device for providing a base layer,  
wherein said base layer only is increased in strength.

4. (Currently amended) A diffusion layer for a fuel cell comprising:  
a base layer; and  
a water-repellent layer coated on said base layer, said water-repellent layer including a synthetic resin filament as a structural reinforcement element.

5. (Canceled)

6. (Withdrawn) A method for manufacturing a diffusion layer for a fuel cell comprising the steps of;

providing a base layer; and  
coating a water-repellent layer on said base layer,  
wherein only either one of said base layer and said water-repellent layer is increased in strength during a respective one of said base layer providing step and said water-repellent layer coating step.

7. (Withdrawn) A method for according to claim 6, wherein said water-repellent layer only is increased in strength during said water-repellent layer coating step.

8. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a first device for providing a base layer; and  
a second device for coating a water-repellent layer on said base layer,  
wherein only either one of said base layer and said water-repellent layer is increased in strength by a respective one of said first device and said second device.

9. (Withdrawn) An apparatus according to claim 8, wherein said water-repellent layer only is increased in strength by said second device.

10. (Previously presented) A diffusion layer for a fuel cell comprising:  
a base layer,  
said base layer including: (a) a yarn of a woven fabric and carbonized, (b) a binder impregnated into the yarn thereby connecting filaments of the yarn and (c) a water-repellent layer with a multi-layer structure including an inner layer and an outer layer different in adhesiveness and strength to each other and carbonized.

11. (Withdrawn) A method for manufacturing a diffusion layer for a fuel cell comprising:

impregnating a base layer constructed of a woven fabric with a synthetic resin binder; and  
carbonizing said base layer and said binder impregnated into said base layer.

12. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a binder impregnation treatment container containing a dissolved binder to be impregnated into a base layer constructed of a woven fabric; and

a carbonizing furnace for carbonizing said base layer and said binder impregnated into said base layer.

13. (Original) A diffusion layer for a fuel cell comprising:

a base layer,

said base layer including: (a) a yarn constructed of a woven fabric and carbonized, and (b) a conductive synthetic resin binder impregnated into the carbonized yarn thereby connecting filaments of the yarn and solidified, said binder being non-carbonized.

14. (Withdrawn) A method for manufacturing a diffusion layer for a fuel cell comprising:

carbonizing a base layer constructed of a woven fabric;

impregnating the carbonized base layer with a conductive synthetic resin binder;

and

solidifying said conductive synthetic resin binder impregnated into said base layer.

15. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a carbonizing furnace for carbonizing a base layer constructed of a woven fabric;

a binder impregnation treatment container containing a dissolved conductive synthetic resin binder to be impregnated into said carbonized base layer; and

a furnace for solidifying said binder.

16. (Original) A diffusion layer for a fuel cell comprising:

a base layer having a water-repellent characteristic,  
said base layer including: (a) a yarn constructed of a woven fabric and carbonized, and (b) a non-conductive synthetic resin binder impregnated into the carbonized yarn thereby connecting filaments of the yarn and solidified, said binder being non-carbonized.

17. (Withdrawn) A method for manufacturing a diffusion layer for a fuel cell comprising:

carbonizing a base layer constructed of a woven fabric;  
impregnating the carbonized base layer with a non-conductive synthetic resin binder selected from the group constructed of fluororesin and silicone resin; and  
solidifying said non-conductive synthetic resin binder impregnated into said base layer.

18. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a carbonizing furnace for a base layer constructed of a woven fabric;  
a binder impregnation treatment container containing a dissolved non-conductive synthetic resin binder to be impregnated into said carbonized base layer; and  
a furnace for solidifying said binder.

19. (Currently amended) A diffusion layer for a fuel cell comprising:

a base layer,  
said base layer including: (a) a non-woven carbon paper made from carbon fibers, and (b) a synthetic resin binder impregnated into the carbon paper with a nonuniform distribution in an impregnation amount in an in-plane direction of the carbon paper and carbonized, a first portion of said base layer ~~where a relatively large amount of binder is impregnated constructing~~ is a rigid portion of said base layer where a relatively large amount of binder, and a second portion of said base layer ~~where a relatively small amount of binder is impregnated constructing~~ a deformable portion of said base layer where a relatively small amount of binder.

20. (Withdrawn) A method for manufacturing a diffusion layer for a fuel cell comprising:

impregnating a base layer of a non-woven carbon paper made from carbon fibers in a wet condition with a synthetic resin binder so that said binder has a nonuniform distribution in an impregnation amount; and  
carbonizing said binder impregnated into said base layer.

21. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a synthetic resin binder impregnating device for impregnating a base layer of a non-woven carbon paper made from carbon fibers in a wet condition with a synthetic resin binder so that said binder has a nonuniform distribution in an impregnation amount; and

a carbonizing furnace for carbonizing said binder impregnated into said base layer.

22. (Canceled)

23. (Withdrawn) A method for manufacturing a diffusion layer for a fuel cell comprising:

impregnating a non-woven base layer made in a dry condition with a synthetic resin binder;

pressing said base layer impregnated with said synthetic resin binder; and  
completely carbonizing said base layer and said synthetic resin binder impregnated into said base layer.

24. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a synthetic resin binder impregnating device for impregnating a non-woven base layer made in a dry condition with a synthetic resin binder;

a press device for pressing said base layer impregnated with said synthetic resin binder; and

a carbonizing furnace for completely carbonizing said base layer and said synthetic resin binder impregnated into said base layer.

25. (Original) A diffusion layer for a fuel cell comprising:

a base layer having opposite surfaces; and

a water-repellent layer made from a mixture of carbon and synthetic resin formed on one surface of said base layer, said water-repellent layer being constructed of a multi-layer structure including an inner layer and an outer layer different in adhesiveness and strength to each other, said inner layer having a strength greater than a strength of said outer layer, said outer layer having an adhesiveness stronger than an adhesiveness of said inner layer.

26. (Withdrawn) A method for manufacturing a diffusion layer for a fuel cell comprising:

repeating a plurality of times a process including coating a layer made from a mixture of carbon and synthetic resin and then solidifying said layer, a solidifying condition being different between respective processes.

27. (Withdrawn) A method according to claim 26 comprising:

coating a first water-repellent layer made from a mixture of carbon and synthetic resin on a carbon base layer and then solidifying said first water-repellent layer at a first temperature higher than a melting temperature of said synthetic resin; and

coating a second water-repellent layer made from a mixture of said carbon and said synthetic resin on said first water-repellent layer and then solidifying said second water-repellent layer at a second temperature near said melting temperature of said synthetic resin.

28. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a furnace for solidifying a first water-repellent layer made from a mixture of carbon and synthetic resin coated on a carbon base layer at a first temperature higher than a melting temperature of said synthetic resin and for solidifying a second water-repellent layer made from a mixture of said carbon and said synthetic resin coated on said first water-repellent layer at a second temperature near said melting temperature of said synthetic resin.

29. (Previously presented) A diffusion layer for a fuel cell comprising:  
a water-repellent layer including two kinds of binders, wherein said two kinds of binders include a first binder made from a synthetic resin having an adhesiveness and a second binder made from material having a higher rigidity than said synthetic resin of said first binder.

30. (Canceled)

31. (Withdrawn) A method for manufacturing a water-repellent layer of a diffusion layer for a fuel cell comprising:  
coating a mixture of carbon and two kinds of binders dissolved in solvent on a base layer of said diffusion layer; and  
solidifying said mixture coated on said base layer at a temperature near a melting temperature of one of said binders.

32. (Withdrawn) A method according to claim 31, comprising:  
coating said mixture including said two kinds of binders on said base layer of said diffusion layer, said two kinds of binders including a first binder made from a synthetic resin having an adhesiveness and a second binder made from material having a greater rigidity than said first binder; and  
solidifying said mixture coated on said base layer at a temperature near a melting temperature of said first binder.

33. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a furnace for solidifying a water-repellent layer made from a mixture of carbon and two kinds of binders and coated on a base layer of said diffusion layer at a temperature near a melting temperature of one of said two kinds of binders.

34. (Currently amended) ~~A diffusion layer for a fuel cell comprising:~~

~~a base layer; and~~

~~a water-repellent layer coated on said base layer, said water-repellent layer being made from a mixture of carbon and synthetic resin and solidified~~

The diffusion layer according to claim 4, said synthetic resin being deformed into filaments being formed by giving a shear force to said a mixture of carbon and synthetic resin before coating of said mixture onto said base layer.

35. (Withdrawn) A method for manufacturing a diffusion layer for a fuel cell comprising:

giving a shear force to a paste including carbon and synthetic resin;

coating said paste on a base layer of said diffusion layer; and

solidifying said paste coated on said base layer at a temperature near a melting temperature of said synthetic resin.

36. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a mixer for giving a shear force to a paste including carbon and synthetic resin;

a coating device for coating said paste on a base layer of said diffusion layer;

and

a furnace for solidifying said paste coated on said base layer at a temperature near a melting temperature of said synthetic resin.

37. (Currently amended) ~~A diffusion layer for a fuel cell comprising:~~

~~a base layer; and~~



~~a water-repellent layer coated on said base layer, said water-repellent layer being made from a mixture of carbon and synthetic resin and solidified~~

~~The diffusion layer according to claim 4, said synthetic resin being deformed into filaments~~ filament being formed by giving a shear force to said water-repellent layer after solidifying said water-repellent layer.

38. (Withdrawn) A method for manufacturing a diffusion layer for a fuel cell comprising:

coating a paste for a water-repellent layer on a base layer of said diffusion layer, said paste including carbon and synthetic resin;

solidifying said paste coated on said base layer at a temperature near a melting temperature of said synthetic resin, and

giving a shear force to said water-repellent layer by causing said base layer and said water-repellent layer to pass between a pair of rolls which generate a stress directed in a width direction of said base layer in said water-repellent layer.

39. (Withdrawn) An apparatus for manufacturing a diffusion layer for a fuel cell comprising:

a coating device for coating a paste including carbon and synthetic resin on a base layer of said diffusion layer;

a furnace for solidifying said paste coated on said base layer at a temperature near a melting temperature of said synthetic resin; and

a pair of rolls for giving a shear force to the paste solidified when said solidified paste and said base layer are caused to pass between said pair of rolls.